

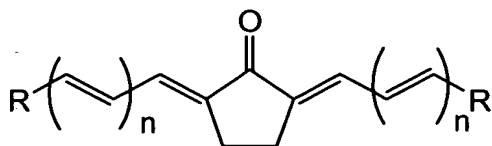
## CLAIMS

1. A photosensitive composition for volume hologram recording comprising a photopolymerizable compound as a refractive index modulation component, a photopolymerization initiator and a sensitizing dye which increases sensitivity with respect to a wavelength of a visible region of the photopolymerization initiator, wherein a maximum absorption wavelength of the sensitizing dye deviates by 14 nm or more from a predetermined volume hologram recording wavelength set in a visible region and the composition itself has absorption at the volume hologram recording wavelength.

2. A photosensitive composition for volume hologram recording according to Claim 1, wherein a binder resin and/or a thermosetting compound is further contained.

3. A photosensitive composition for volume hologram recording according to Claim 1 or 2, wherein the sensitizing dye is a cyclopentanone skeleton containing compound represented by the following general formula (1):

General formula (1):

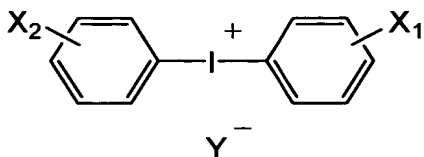


wherein, "R" is a carbon-nitrogen containing substituent

represented by "N<sub>x</sub>C<sub>y</sub>" in which x=1 to 4, y=8 to 30; "R" may contain a hydrogen atom and/or a halogen atom; "n" is an integer of 0 to 3.

4. A photosensitive composition for volume hologram recording according to any of Claims 1 to 3, wherein the photopolymerization initiator is a compound containing diaryliodonium skeleton represented by the following general formula (2):

General formula (2):



wherein, each of "X<sub>1</sub>" and "X<sub>2</sub>" is independently an alkyl group having 1 to 20 carbons, halogen or an alkoxyl group having 1 to 20 carbons; "Y<sup>-</sup>" is a monovalent anion.

5. A photosensitive composition for volume hologram recording according to any of Claims 1 to 4, wherein the photopolymerizable compound is at least one kind selected from the group consisting of a photoradical polymerizable compound and a photocationic polymerizable compound.

6. A photosensitive composition for volume hologram recording according to any of Claims 1 to 5, wherein the

photosensitive composition for volume hologram recording further contains a second refractive index modulation component having different refractive index from the photopolymerizable compound.

7. A photosensitive composition for volume hologram recording according to any of Claims 1 to 6, wherein the maximum absorption wavelength of the sensitizing dye deviates by 14 nm or more with respect to a predetermined volume hologram recording wavelength set within a region of 514 nm to 560 nm.

8. A photosensitive composition for volume hologram recording according to any of Claims 1 to 7, wherein a volume hologram having a diffraction efficiency of 80 % or more can be obtained.